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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,652	09/29/2004	Andreas Fechtenkoetter	53410	2281

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EXAMINER	
HUANG, MEI QI	

ART UNIT	PAPER NUMBER
1713	

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/509,652	FECHTENKOETTER ET AL.	
	Examiner	Art Unit	
	Mei Q. Huang	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 September 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *09/29/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: The selective formats of various groups in this claim, line 13-14, are improper in that it is not clear whether the individual members in the group are selected in alternatives only or in both alternatives and combinations. In general, when the members in a group are individually chosen as alternatives, the format, "selected from A, B, ..., *or* X" or "selected from the group consisting of A, B, ..., *and* X", should be used; and when the members in a group are chosen both in alternatives and combinations, the format "selected from the group consisting of A, B, ..., X, *and* mixtures thereof" should be used. See MPEP 2173.05 (h). Applicants are requested to amend the selective formats of the instant claims according to the above guidance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-3 and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marius (U.S. Patent No. 4,875,964) in view of Cooperman et al. (U.S. Patent No. 5,374,687) and further in view of Chang (U.S. Patent No. 4,200,561).

The prior art to Marius relates to liquid mixtures comprising

(a) Ethylene polymer (A) comprising 83-95.7 moles% of units derived from ethylene, 4-15 moles% of units derived from at least one alkyl acrylate or methacrylate, the alkyl group having from 1-16 atoms of carbon, and 0.3-2 moles% of units derived from maleic anhydride, and

(b) At least one solvent (B) selected from the group consisting of aliphatic, cycloaliphatic and aromatic hydrocarbons having 5-12 atoms of carbon, dechlorinated solvents and esters (Abstract, column 2, line 10). A terpolymer made from ethylene, ethyl acrylate, and maleic anhydride is shown in one of working examples (column 4, line 11-15). Thus, the weight ranges for the monomers could be 86 wt% of ethylene, 13 wt% of alkyl acrylate, and 1 wt% of maleic anhydride, which are within the instantly claimed ranges. The concentration of the terpolymer in the solvent (B) is preferably lower than or equal to 40 wt% (column 2, line 17-19).

The difference between the prior art to Marius and the present application is discussed as follows. (1) Marius teaches use of the ethylene polymer liquid mixture in formulating coatings but is silent as to what function the liquid mixture plays in the coating compositions; (2) Marius does not use an alkenecarboxylic acid in the

terpolymer as required by the instant claim; and (3) Marius does not exemplify a use of multiple solvents.

The prior art to Cooperman et al. discloses ethylene-acrylic acid copolymers, which can be used as an additive in aqueous coating compositions and provides excellent pigment suspension and rheological properties to aqueous based coating compositions (Abstract). Ethylene-acrylic acid copolymers may include carboxyl-containing ethylene copolymers such as ethylene-acrylate acid-vinyl acetate terpolymers (column 5, line 12-15). Solvents are also included in formulating the ethylene-acrylic acid copolymers as coating additives (column 5, line 58-66). Cooperman et als' ethylene-acrylic acid copolymer is substantially identical to Marius's ethyl polymer liquid mixture and is also applied in formulating a coating. Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to realize the function of the Marius's ethyl polymer mixture functions as an additive providing excellent pigment suspension and rheological properties to aqueous based coating compositions, as taught by Cooperman et al., thus, to meet the function of a thixotropic agent and arrive the instant claim.

Cooperman et al. also teach that suitable acids used in making the ethylene copolymers include acrylic acid, methacrylic acid, ethyacrylic acid, maleic acid, and anhydride of dicarboxylic acids such as maleic anhydride (column 4, line 35-38). Cooperman et al. herein teach the interchangeability of acrylic acid, methacrylic acid, ethyacrylic acid, maleic acid, and anhydride of dicarboxylic acids such as maleic anhydride as functionally equivalent organic acid in a similar ethylene polymer

composition. Thus, it would have been obvious to one of ordinary skill in the art to replace maleic anhydride in Marius's ethylene polymer liquid mixture with acrylic acid, as taught by Cooperman et al., based on their expected interchangeability as functionally equivalent organic acid, motivated by a reasonable expectation of success. *In re O'Farrell,* 853 F.2d 894, 903, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988).

The prior art to Chang discloses a stable, compatible thixotropic gel made from a mixture of a solvent incompatible at room temperature with the gallant, a cosolvent compatible with both the gallant and the solvent, and a gelling agent (gallant), which is a copolymer of ethylene and at least one comonomer selected from acrylic acid, methacrylic acid, or vinyl acetate (Abstract, column 1, line 54-65). The notion of amount of the solvent and cosolvent used in formulating the thixotropic gel is disclosed at column 1, line 54-65, and column 3, line 12-27. In light of Chang's teaching of amount of solvent and cosolvent used in formulating a thixotropic gel comprising substantially identical comonomers as Marius's, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ such amounts of solvent and cosolvent in Marius's ethylene polymer liquid mixture motivated by a reasonable expectation of successfully obtaining the corresponding liquid mixture as a stable, compatible thixotropic agent, as taught by Chang.

In regarding to Claim 5, Chang does not specify an adding order or sequence in mixing three ingredients, solvent, cosolvent and terpolymer, to make the thixotropic agent. However, since applicant has not demonstrated the criticality of such adding sequence, the selection of any order of performing process step is *prima facie* obvious

in the absence of new or unexpected results. *In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946); *In re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930). See MPEP §§ 2144.04.

As to Claims 6-9, Marius's disclosure of making a coating using the ethylene polymer liquid mixture and a process for coating comprising a substrate can be seen at column 2, line 58-67, and column 3, line 15-16). The substrates to which the coating process is applicable may be of various natures including metals (column 3, line 34-35).

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marius (U.S. Patent No. 4,875,964) in view of Cooperman et al. (U.S. Patent No. 5,374,687), further in view of Chang (U.S. Patent No. 4,200,561), and yet still further in view of Ziegler et al. (U.S. Patent No. 5,210,166).

The discussion of the prior arts, US' 964 to Marius, US' 687 to Cooperman et al., and US' 561 to Chang, on Claim 1 is presented in paragraph 3 above and is incorporated herein by reference. All the aforementioned prior arts do not disclose the amount of the components required by the instant claim 4.

The prior art to Ziegler et al. relates to copolymer made from 89 wt% of ethylene, 4 wt% of acrylic acid and 11 wt% of two different acrylates (column 4, Example 2). The patented ethylene copolymers are advantageous in being swellable in aqueous media, etc. (column 4, line 41-44) and can be used as additives to coating systems (column 1, line 22).

It has been consistently held that even a slight overlap in range establishes a *prima facie* case of obviousness. *In re Woodruff,* 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990) or *Titanium Metals Corp. of America v. Banner,* 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). In light of the case law citied herein, and given that there is only a slight difference between the amount of 89 wt% of ethylene disclosed by Ziegler et al. and the amount disclosed in the present claims, 90-99 wt% of ethylene and further, given the fact that no criticality is disclosed in the present invention with respect to the amount of ethylene (slightly below 90 wt%), it would have been obvious to one of ordinary skill in the art that the amount of ethylene recited in the present claims is an obvious variant of the amounts disclosed in the prior art, and accordingly, one of ordinary skill in the art would have arrived at the claimed invention. See §§ MPEP 2144.05. Accordingly, one having ordinary skill in the art would have appreciated and employed the comonomer amounts, as taught by Ziegler et al., in the Marius's ethylene polymer liquid mixture motivated by a reasonable expectation of successfully obtaining the corresponding ethylene polymer liquid mixture because Ziegler et al. have successfully exemplified such terpolymer being applicable as a coating additive.

Conclusion

The prior art made of record but not relied upon is considered pertinent to applicant's disclosure. The following references have been cited.

U.S. Patent No. 2,985,631 to Jones et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mei Q. Huang whose telephone number is (571) 272-3549. The examiner can normally be reached on 8am - 4pm, Mon. - Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mei Q. Huang
Examiner

May 23, 2005

DAVID W. WU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700